

THE DEVELOPMENT OF A PROGRAM OF
PROGRESSIVE WRESTLING RESISTANCE
EXERCISES FOR SECONDARY SCHOOL BOYS
H. L. HALL, Jr.

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THE DEVELOPMENT OF A PROGRAM OF
PROGRESSIVE WEIGHT RESISTANCE
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A Service Paper

Submitted by

John J. O'Connell, Jr.

In Partial Fulfillment
of the Requirements for the Degree of
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INTRODUCTION

The development of weight resistance exercises is not by any means a new method of exercise. The father of progressive weight resistance was a man known as Milo of Corona who lived twenty-five hundred years ago. Milo originated progressive exercise when he hit upon the idea of carrying a young bull from the time it was a small calf until it was full grown. He carried the animal on his shoulders around the farm. This feat has been repeated many times in modern times although the results may not necessarily be the same.

Historians reveal that roughly hewn, long handled weights similar to barbells were found among the Chinese and their ancestors over four thousand years ago. The Chinese are also credited with a unique method of progressive exercise in that they required youngsters in some regions to carry a small pack of stones on their back. As the size of the child increased, the number and weight of the stones were increased. This, of course, could not be considered a very scientific method, for it did not even consider individual differences among the youngsters.

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In passing through various texts on early Roman history, it was found that the Roman soldiers practiced a form of weight resistance training. On marches, the soldiers were loaded

shoes so that when they were in battle, their legs did not tire as they were accustomed to the weights in training and these, of course, were removed during battle.

Boxers and baseball players have used a simple form of weight resistance for some time. In training for a boxing match, the boxer uses training gloves that are much heavier than the regulation gloves used in the match. As a result, the boxer's arms, accustomed to the heavier gloves, have more life. In baseball, the form of weight resistance which is used often goes by unnoticed by the majority of the spectators. In awaiting his turn at bat, the next batter is seen swinging several bats, or in professional baseball, he swings a bat which is weighted with a lead shaft. This makes the bat he uses at the plate seem very light and increases the speed of his swing.

With these examples in mind it can readily be seen that present day methods of progressive weight resistance exercises are simply an outgrowth of methods that have been used down through the years. Today, however, progressive weight resistance exercises are designed to develop the overall musculature of the individual, not just some isolated part unless it should become necessary to do so because of some functional reason.

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CHAPTER I

PURPOSE OF THE PROGRAM

One of the most important phases of the physical education program is the teaching of physical skills. Unfortunately, many pupils are subjected to this program of physical skills without the background of good physical fitness. As a result of this situation, there are pupils who do not become proficient in these skills because they lack the strength to perform them correctly.

Looking over the field of athletics, for example, we find many athletes in our schools who would have enjoyed a much brighter and more successful career if they had been more powerfully developed throughout the arms, or shoulders, or possibly the abdominal region or the back and legs.

It is our duty as physical educators to supply the youth in our schools with physical skills to better enable them to prepare themselves for the tasks of life but at the same time it is our greater duty to develop in the pupil that strength that will permit him to execute these skills to the highest degree.

Nicoll and Long¹ cover this point quite clearly when they

¹ James S. Nicoll and May Belle Long, Developmental Physical Education (World Book Company, 1947) P. 1

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Physical Education (World Book Company, 1927) p. 1
J. A. S. Nicola and Ray Belle Longfellow

point out that physical performance is dependent on strength, but we often find the development of muscular strength neglected in physical education classes.

With this view in mind, the program of weight resistance exercises offered in this paper will be used primarily to increase the muscular strength of the pupil for the purpose of building greater proficiency in the performance of physical skills.

The program for the various grades is made up for general muscular development, but at the discretion of the physical education instructor, exercises may be selected from the program for specialization because of some particular weakness in a given part of the body.

Physical education instructors must be cautioned in the use of this program of weight resistance exercises so that they will not use the program as their entire physical education curriculum. The weight resistance program is designed to integrate with the overall physical education program and is not to be used to replace the overall program.

It is intended that the program will be used as a specific unit in the physical education class to be used over a set period just as the basketball unit, or volleyball, badminton, soccer, or touch football units. Just as in the other units, those pupils who desire more work in the weight resistance program may take part in the after school program. If

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It is intended that the program will be used as a supplement to the physical education class to be used over a set period just as the basketball unit, or volleyball, badminton, soccer, or touch football unit. Just as in the other units, those pupils who desire more work in the weight resistance program may take part in the after school program. If

the instructor deems it advisable, any pupil with physical limitations may be assigned to a corrective class where this program can be used to advantage. By the use of weight resistance exercises, the pupil can visibly measure his gains in strength and development and at the same time erase many functional disorders of the muscular system.

The program of weight resistance exercises can really be of value when used in conjunction with the testing program in the physical education classes. One of the important features of the physical education curriculum is the testing program. The main purpose of the testing program should be to point out the pupil's strong points or weak points with a view to corrective measures to be taken. Unfortunately, in many physical education programs, this is not the case. The testing program is nothing more than a time and energy consuming factor that must be included in the course because it is considered acceptable procedure. In commenting on the testing program in the schools, Irwin² brings out the need for follow-up procedures. Occasionally the testing program within the school is used to the detriment of the entire physical education program. Many schools have an elaborate testing program only to have the results filed away and never used.

² Leslie W. Irwin, The Curriculum in Health and Physical Education, (The C.V. Mosby Company, 1944) P. 347

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It seems quite possible that the reason the results of the testing program are filed is the lack of any suitable follow-up procedure that might be used. From the standpoint of strength and muscular development, the weight resistance program should prove invaluable as a follow-up procedure.

In a school situation where the school authorities take an interest in the physical education, there should be little trouble in selecting those pupils who may take part in the program of weight resistance exercises. In such a school system, the authorities will see that each pupil receives a medical examination before he takes part in the required physical education program.

In a situation where such a procedure does not exist some suitable screening process will have to be devised whereby only those accepted for the general physical education program may take part in the weight program. Exceptions may be made, of course, depending on the cause for a medical excuse.

In conducting the class for weight resistance exercises, it must be stressed that proper supervision must prevail at all times to prevent overloading the bars and fooling while others are working with the weights. The supervisor should be a mature individual preferably the physical education instructor rather than a pupil from the leaders' corps. Classes in weight resistance exercises should be guided with the same

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degree of supervision that would be given in the swimming pool, tumbling class or any other activity where fooling and lack of attention could be the cause of injury, however slight.

A clear impression of the exercises in the weight resistance program may be gained by noting a description of the pieces of equipment used in performing the exercises. All the exercises which are to be included in the weight resistance program are to be performed with either a barbell or an adjustable dumbbell. The barbell consists of a solid steel bar which may vary in lengths of four, five or six feet depending on the type. It has a diameter of one inch and weighs approximately 15 pounds with the length of the bar a determining factor of its weight. The weights which are placed on the bar are circular iron plates which vary in diameter and thickness depending on the weight of the plate. In the center of the plate there is a hole to permit it to be slipped on to the bar. These plates come in standard weights of $1\frac{1}{4}$, $2\frac{1}{2}$, 5, $7\frac{1}{2}$, 10, $12\frac{1}{2}$, 15, 20 and 25 pounds with the selection of plates depending on the type of barbell set that has been obtained. The barbell must be balanced with similar weights on each end. To accomplish this, a lock collar is placed about twelve inches from each end of the bar and locked in place to prevent the plates from slipping toward the center of the bar and disrupting the balance. After the necessary weights are placed on

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each end of the bar, another lock collar is placed on each end of the bar right up against the last plate to prevent the plates from slipping off the end. A small wrench secures the lock collars.

The adjustable dumbbell is set up on the same plan. The bar consists of a thirteen inch hollow pipe about one inch in diameter and weighing approximately one pound. A lock collar is also secured to each end of the bar about three or four inches from the end of the bar. The plates are added as required and a lock collar is placed on each end to prevent slipping of the plates.

Some of the exercises in the program will be performed with the barbell while other will be performed with a single dumbbell or a dumbbell in each hand. By combining the use of the dumbbells and barbell, the various muscle groups may be exercised in many different positions.

From this description of the equipment it should be easier to picture the barbell or dumbbell as we read the outline of various exercises. The term "progressive weight resistance exercises" as used in the title should now have some meaning. The weight itself acts as the resistance and as more plates are added progression takes place. It will be wise for the physical education instructor to caution his pupils to make haste slowly and not try to increase the amount of weight they

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handle too rapidly. The instructor should not permit the pupil to add weight until he has proven that he can perform the exercise in perfect form for ten to twelve repetitions. The pupil will receive far greater benefits by using a light weight for ten to twelve repetitions in perfect form than by using a weight that is too heavy and which causes him to perform the movement incorrectly. An accurate record should be kept by the instructor for each pupil and this record should show the starting weight for each exercise and any progressive increase with the date the increase was made. This should give a picture of the rate of progress for each pupil.

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CHAPTER II

THE MUSCLEBOUND QUESTION

The term "musclebound" is used rather loosely by those within the field of physical education as well as those outside the field. Unfortunately, too many of these people are ignorant of the true meaning of the term. Some of these individuals actually refer to boys and men with well developed muscles as being musclebound without even seeing them in action. This is like condemning a man without listening to the evidence against him. Many of these derogatory remarks are made by those who are in very poor physical condition themselves and seek to hide their condition by criticism of their more fortunate fellows.

John C. Grimek,¹ a noted strength athlete, author, and one time "Mr. America", has defined the term "muscleboundness" by saying that it does not necessarily indicate that one must possess a lot of muscle, rather it is a condition which restrains the action of the muscles, incomplete articulation of the joints, restricted movements of the extensors and flexors and therefore produces a condition of slower and incomplete

¹ John C. Grimek, "To be or Not to be - Musclebound," Strength and Health, March, 1947

CHAPTER II

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reactions. This general definition gives a clearer picture of the actual condition.

In considering cases of muscleboundness, rather than taking well developed boys who have worked hard for this development, it is more fitting to take for an example a fat individual. With the definition of muscleboundness in mind, this type individual certainly fits into all the factors covering the condition. The excess mounds of flesh covering his body, and particularly his midsection, certainly restrict his movements. The only difference, outside the glandular cases, between the fat boy and one who has trained his muscles with weight resistance exercises, is that one has worked for what he has. Muscular development does not come as a result of wishing for it. An individual must work for what he gets. Nothing comes from doing nothing.

Weight resistance exercises are designed to prevent any condition such as muscleboundness. Each movement must be executed correctly and this gives the muscles the utmost in contraction and extension. Weight resistance exercises tend to stretch shortened muscles and ligaments and are useful aids in correcting deformities and abnormalities of bodily functions.

Pupils will derive all around physical benefits as a result of these exercises. They will develop greater strength,

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In considering cases of muscle weakness, rather than taking well developed boys who have worked hard for this development, it is more fitting to take for an example a fat individual. With the definition of muscle weakness in mind, this type individual certainly fits into all the factors covering the condition. The excess pounds of flesh covering his body, and particularly his midsection, certainly restrict his movements. The only difference, outside the muscular cases, between the fat boy and one who has trained his muscles with weight resistance exercises, is that one has worked for what he has. Muscle development does not come as a result of wishing for it. An individual must work for what he gets. Nothing comes from doing nothing.

Weight resistance exercises are designed to prevent any condition such as muscle weakness. Each movement must be executed correctly and this gives the muscles the stress in contraction and extension. Weight resistance exercises tend to stretch shortened muscles and ligaments and are useful also in correcting deformities and abnormalities of bodily functions. People will derive all around physical benefits as a result of these exercises. They will develop greater strength,

build endurance, balance, coordination, increase wind and improve elimination and assimilation.

Many of our outstanding athletes stay in condition during the off season by the use of weight resistance exercises and also improve themselves physically during their training seasons. Just to mention a few of those who have revealed their methods of physical conditioning, we can start with one of the greatest heavyweight boxing champions the sport has ever known, Joe Louis, who uses weight resistance exercises as part of his training program. "Doc" Blanchard, formerly of West Point, and one of the hardest running backs in the history of football, was a regular patron of the weight training room at the United States Military Academy. Bob Feller built up an enviable strikeout record as a pitcher for the Cleveland Indians baseball team. He uses weight resistance exercises to keep in condition during the winter. Johnny Beazley of the Boston Braves is another athlete who has found weight training to be of value in his pre-season conditioning. In a more general way, we could add the names of many outstanding wrestlers, tumblers and acrobats, and many other athletes.

In considering the musclebound question, it is well to note the various types of exercises that are to be included in the program to be developed. According to Bob Hoffman, world famous authority on weight lifting and weight resistance exer-

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Many of our outstanding athletes stay in condition during

the off season by the use of weight resistance exercises and also improve themselves physically during their training season. Just to mention a few of those who have revealed their methods of physical conditioning, we can start with one of the greatest heavyweight boxing champions the sport has ever known, Joe Louis, who uses weight resistance exercises as part of his training program. "Doc" Blalock, formerly of West Point,

and one of the hardest punting backs in the history of football, was a regular patron of the weight training room at the United States Military Academy. Bob Keller built up an enviable strike record as a pitcher for the Cleveland Indians baseball team. He uses weight resistance exercises to keep in

condition during the winter. Johnny Heasley of the Boston Braves is another athlete who has found weight training to be of value in his pre-season conditioning. In a more general way, we could add the names of many outstanding wrestlers,

trackers and acrobats, and many other athletes.

In considering the musculoskeletal question, it is well to note the various types of exercises that are to be included in the program to be developed. According to Bob Hoffman, world famous authority on weight lifting and weight resistance exer-

cises, the following types of exercises should be employed:

1. Exercises for building muscles and strength.
2. Exercises to build vital force, strengthen the internal organs, improve the process of elimination, improve circulation and develop endurance.
3. Exercises to increase speed, prevent possible slowness, stiffness, or sluggishness which might be the result of only slow hard exercises.
4. Stretching exercises to make the body more supple, flexible and constantly youthful.
5. Exercises to develop timing or coordination.²

In considering the development of a program of weight resistance exercise, we must consider the whole pupil. Overall development will bring far greater results than specialization on one part of the body. As mentioned before, there are times in the corrective class when it is necessary to concentrate the exercises on some certain area, but even in such cases, the instructor should never lose sight of the aim for overall development for all pupils.

The major muscle groups that we consider are the Trapezius muscles, which give the slope to the shoulders; the Biceps and Triceps, which are the muscles on the front and back of the arm and which all boys like to show off to their friends as a sign of strength; the Deltoids, which are the muscles at the tip of the shoulders and, when developed, give a broad appearance to the shoulders; the muscle of the upper back known as Latissimus Dorsi; the muscles of the sides; the mus-

² Bob Hoffman, How to be Strong, Healthy and Happy (York, Pa: Strength and Health Publishing Company, 1938), p.388

class, the following types of exercises should be employed:

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In considering the development of a program of weight resistance exercise, we must consider the whole pupil. Over-all development will bring far greater results than specialization on one part of the body. As mentioned before, there are times in the corrective class when it is necessary to concentrate the exercises on some certain area, but even in such cases, the instructor should never lose sight of the aim for overall development for all pupils.

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cles of the chest, the Pectorals; the abdominals, those muscles which protect the internal organs; the muscles of the calf, foot and ankle and most important of all, the muscles of the upper legs. The leg muscles should receive a great deal of attention because they are the most powerful of all muscles, but when neglected they are the first to slow a man in later years. Many athletes have had their careers cut short because their legs could no longer meet the demands that were being made upon them.

One prejudice held by many people against weight resistance exercises and weight lifting in any form is the fear of injury to the muscles or joints. In the various major sports in our schools, such as football, baseball, track, basketball, and the like, the contest is always preceded by a warm-up period. This is conducted to loosen the muscles, which are said to be in a cold state, in order to prevent sprains, strains and pulled muscles. If this is true in such sports, why then would one neglect to do the same thing in preparing for a workout consisting of weight resistance exercises? With proper supervision by the physical education instructor, there should be no fear of a pupil doing any harm to his muscles, let alone becoming musclebound. A good warm up period should precede any workout with the weights and this should be insisted upon and checked by the instructor.

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If the instructor continually stresses the point to the pupils that all exercises must be performed from the extreme of extension to the extreme of contraction, the musclebound question will no longer be a problem.

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CHAPTER III

WEIGHT LIFTING AND WEIGHT TRAINING

All too frequently, the terms weight lifting and weight training, which is the use of weight resistance exercises, are used interchangeably. This tends to create a confused and incorrect attitude concerning these activities even among physical educators. There is a difference between these two terms.

Weight lifting¹ is a competitive sport which is recognized in fifty-two nations of the world. In this sport, weights are lifted in competition with others according to standard rules of the sport. The rules are set up by the International Weight Lifting Federation and have been adopted all over the world. Weight lifters compete against each other in three International lifts known as the Two Hands Press, Two Hands Snatch and Two Hands Clean and Jerk.

Weight training, on the other hand, is not a competitive sport. It is a system of exercises, known as weight resistance exercises, designed to develop muscular strength by means of progressive increase in the amount of resistance used in the

¹ Bob Hoffman, "Official Weight Lifting Rules and Regulations", Strength and Health, March, 1941, P. 40

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various exercises. The individual is not performing the exercises under the stress of competition for actually any spirit of competition that may be involved is against himself.

Morehouse and Rasch set forth certain principles to be followed in a course of weight resistance exercises and the pupils would be wise to pay attention to some of this advice.

1. Work out at least three times a week.
2. Undertrain rather than overtrain.
3. Start with the weight recommended for each exercise.
4. Work slowly. Rest a few minutes between each exercise.
5. Keep warm. Wear sweat clothes if weather is cool.
6. Remember that this is a weight training program and not a weight lifting program. Do not see how much you can lift.²

One of the chief factors in favor of progressive weight resistance exercises with an adjustable barbell or dumbbell is that it can be readily and quickly adapted to pupils of all ages and pupils covering a wide range of physical conditions.

The program of weight resistance exercises can be set up on the squad type of activity or the entire class may take part at the same time, depending on the amount of equipment with which the class may work. If on the squad method of activity, part of the class may be engaged in some group activity while the other part of the class is taking part in the weight pro-

² Lawrence E. Morehouse and Philip J. Rasch, "Weight Training", Scholastic Coach, December, 1947, P. 12

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4. Work slowly. Rest a few minutes between each exercise.
5. Keep warm. Wear sweat clothes if weather is cool.
6. Remember that this is a weight training program and not a weight lifting program. Do not see how much you can lift.

One of the chief factors in favor of progressive weight resistance exercises with an adjustable dumbbell is that it can be readily and deftly adapted to pupils of all ages and pupils covering a wide range of physical conditions. The program of weight resistance exercises can be set up on the speed type of activity or the entire class may take part at the same time, depending on the amount of equipment with which the class may work. If on the speed method of activity, part of the class may be engaged in some group activity while the other part of the class is taking part in the weight pro-

5 Lawrence E. Foreman and Philip J. Hesch, "Weight Training", Physical Education, December, 1947, p. 12

gram. If the entire class is to work out at the same time, which would be the ideal situation, the class should be divided into as many groups as there are barbells and dumbbells available. By means of experimentation, as mentioned before, the strength of each boy may be determined. The groups can then be selected according to strength. A mat, such as is used in tumbling, can be the center of activity for the actual work with the weights for each group. The only pupil who is permitted to stand on the mat is the one who is actually performing the exercise. As in tumbling, it is quite desirable to have two pupils in each group act as spotters and they will take positions on each side of the performer at the end of the bar. In this way, they will be in a position to take the bar if the performer gets into any kind of trouble in doing this exercise. With groups equalized as to strength, there will be less changing of weights for any given exercise for several pupils.

One point that must be considered in formulating the weight resistance program of exercise is the procurement of equipment. When school authorities hear that the equipment used in the weight program is made of iron and steel, they may throw up their hands in horror and turn a deaf ear to the program because of the present high cost of such materials. The cost of these materials, however, is not as great as it may seem. A one hundred pound barbell, which would be ideal for

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secondary school boys, would cost about sixteen dollars. Compare this figure to the cost of a leather basketball which ranges from fifteen dollars up to the vicinity of twenty-one dollars. Also compare this cost to that of a dozen baseballs which would cost in the vicinity of twenty-five dollars. When we consider the life of a basketball or a baseball which is rather short, and compare it to the many years of use that one would get from a barbell set, it is found that the cost is very small indeed. Yet the authorities rarely hesitate to purchase several basketballs and a few dozen baseballs each year for use in the physical education classes and the varsity athletic program. It would seem, therefore, that the physical education department could obtain several barbell sets over a period of years and really develop a fine program for all pupils as time went on. The more sets that can be accumulated, the more work that will be accomplished.

There is one obstacle that must be overcome in starting a program such as the weight program, and that is the development of the attitude of pupils toward weight resistance exercises and exercise in general. There are many older people who are giving the youngsters a poor attitude concerning exercise. Even our cartoonists burlesque the idea of improving ourselves physically. There are those who feel that there is no need to build up added strength just as long as one has enough strength

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to do the tasks that usually confront people in everyday life. Often emergencies arise and one may be called upon to extend himself to the limit. It is really a sad day when one's limit is not great enough to cope with the situation. It is a wise policy to build a reserve that can be called upon to carry the individual through any period of emergency.

Instructors must continually caution pupils in the amount of weight that they should handle in the various exercises. Individual differences must be considered to a greater degree than in any other activity. The youngster who is stronger than the average will be able to handle more weight in a given exercise than a boy who is rather weak for his size. Each pupil must be treated as an individual who is in competition with himself and not with his classmates. It is never necessary to make a pupil lift his absolute limit. If pupils are compelled to lift their limit, they may shy away and take a dislike for the program. It is recommended that the pupil start moderately and gradually work up rather than starting with a weight with which he must strain to lift. It is not so much the fear of strain that causes one to ask for caution in handling a weight that is too heavy. Just as important, is the fact that if too much weight is employed, the exercises will not be performed properly. Faulty habits are developed when the pupil must strain to lift a weight ten or twelve repetitions.

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not be performed properly. Healthy habits are developed when

the pupil must strain to lift a weight ten or twelve repetitions.

Form and correct performance are sacrificed just to get the bar up. As in any other form of activity, once improper habits are developed, they are difficult to break.

The instructor should allow the pupil to experiment with the various weights in the beginning to determine the amount of weight that he can handle easily for ten or twelve repetitions. This should be done under close supervision. It is far better to have the pupil start with a weight that is too light rather than one that is too heavy. A good point to remember when checking the pupils for their starting weight is to find a weight that can be used for each exercise that will leave him comfortably tired at the completion of his workout rather than exhausted. In determining the starting weight, it must be realized that some muscle groups are capable of handling heavier poundages than others and this factor must be considered. It may be that the pupil will use the same weight for several exercises, but usually he will use much heavier weights in the leg exercises.

When the starting level is found for all the various exercises, a record should be kept by the instructor for each pupil. This record should include the starting weight and any progressive increase that may be made by the pupil in his training.

The instructor must always be on the alert for cases of over-fatigue on the part of the pupils and see that progression

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in the amount of weight used is not too rapid.

The Armed Forces used the idea of weight resistance exercising to good advantage during World War II. Programs were set up for those who were on a duty status and in many cases the equipment that was used was of a homemade and makeshift type, from iron wheels to cans of cement and logs of wood. Any material that could be used in a progressive manner was put to use. The most important part of the Armed Forces program took place in the service hospitals where men were recuperating from wounds and illness. The programs were graded from very light exercises that could be performed while in bed to the more advanced type as the patient progressed along the road to health. Many men found that on leaving the hospital they were in far better physical condition than they had enjoyed even before their illness.

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CHAPTER IV

PROGRAM OF EXERCISES

In selecting the weight resistance exercises for the various grades, consideration was given mainly to the degree of difficulty in the performance of each exercise. With this factor in mind, it will be found that the easiest exercises to perform will be in grade seven and they will progress in difficulty until the twelfth grade or senior year of high school where the most difficult exercises will be found. In determining the type of exercise that could be performed at any given level the average type boy was considered.

An effort should be made to make haste slowly. Confine the activity of the seventh grade boys to those exercises listed for that grade. However, when we get to grade eight, the pupils will not be confined only to those exercises listed for grade eight as they will also be able to perform those listed under grade seven. Progressively working up to the senior year of high school it will be seen that these boys have the entire program of six grade levels from which their exercises may be selected upon approval of their instructor. By the time the pupil reaches grade twelve he should have a fine

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background of weight resistance exercise if he has applied himself to his work at all. As the pupil progresses through the grades, the element of overall physical development becomes more evident. The pupil has a greater variety of exercises from which to choose, thereby developing many more muscles in a greater variety of positions.

Exercises for Grade 7

1. Alternate Press (Dumbbells)
2. Lateral Raise (Dumbbells)
3. Forward Raise (Dumbbells)
4. Alternate Curl and Press (Dumbbells)
5. Side Bend (Dumbbells)
6. Deep Knee Bend (Dumbbells)
7. Raise on Toes (Barbell)
8. Dead Lift (Barbell)
9. Two Hands Press (Barbell)
10. Straddle Hop (Dumbbells)

Description of the exercises:

1. Alternate press with dumbbells. Pick up a dumbbell in each hand and bring them to shoulder level, knuckles out and elbows close to the sides. Raise the right arm straight overhead until the elbow locks, or straightens out. As

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Exercises for Grade V

1. Alternate Press (Dumbbell)
2. Lateral Raise (Dumbbell)
3. Forward Raise (Dumbbell)
4. Alternate Curl and Press (Dumbbell)
5. Side Bend (Dumbbell)
6. Deep Knee Bend (Dumbbell)
7. Raise on Toes (Barbell)
8. Dead Lift (Barbell)
9. Two Hands Press (Barbell)
10. Straddle Hop (Dumbbell)

Description of the exercises:

1. Alternate press with dumbbells. Pick up a dumbbell in each hand and bring them to shoulder level, knuckles out and elbows close to the sides. Raise the right arm straight overhead until the elbow locks, or straightens out. At

the right arm is lowered, raise the left arm in the same manner so that a continuous movement is effected. Ten counts with each arm should be sufficient. The muscles of the arms and shoulders are called into play in this movement with particular emphasis on the Trapezius.

2. Lateral raise with dumbbells. Grasp a dumbbell in each hand and then allow the arms to hang at the sides with knuckles of hands facing out. Raise arms to the side up to shoulder level with elbows kept stiff. Both arms should be moved at the same time with ten to twelve repetitions sufficient. This movement is an exercise to benefit the Deltoids.
3. Forward raise with dumbbells. With a dumbbell in each hand, bring the hands slightly to the front with the knuckles facing the front. Keeping the elbows stiff, raise the dumbbells with a forward motion to the level of the shoulders then return to the starting position. The movement affects the deltoids in a slightly different position from the lateral raise.
4. Alternate curl and press with dumbbells. Hold a dumbbell in each hand and permit the arm to hang

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4. Alternate curl and press with dumbbells. Hold a

dumbbell in each hand and permit the arm to hang

stiffly at the side with knuckles facing the rear. With a forward motion, holding elbows close to the sides, curl the right hand to the shoulder level. Bring the left hand up in the same manner. With both dumbbells at shoulder level raise the right arm straight overhead then the left arm straight overhead. In lowering the dumbbells, lower the left hand to shoulder level then the right followed by the lowering of the left hand to starting position then the right hand. Ten complete movements should give the pupil a good workout. This exercise is an excellent co-ordination drill and brings into play the Biceps and Trapezius and also the Triceps.

5. Side Bend with dumbbell. Hold a fairly heavy dumbbell in one hand at the side. With both feet flat on the floor, shoulder width apart, bend to the side allowing dumbbell to drop as low as possible. When the extreme of the movement is reached, come back to the starting position. Repeat until ten movements have been completed then shift dumbbell to the other hand and bend to the other side for ten repetitions. This should be a stretching movement, therefore there should

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not be any twisting at the waist. All the muscles of the side work in this exercise and this movement is extremely beneficial in removing the so-called "spare-tire" from around the waist.

6. Deep Knee Bend on toes with dumbbells. Pick up a fairly heavy dumbbell and hold it at the side while standing erect. From this position, go into a squat keeping the heels off the floor. Do not permit the dumbbells to touch the floor. Keeping the back straight, come up to the starting position. Repeat this movement ten times. This movement is a leg exercise, benefiting particularly the Rectus Femoris.
7. Raise on toes with barbell. Placing suitable weight on a barbell, grasp the bar with both hands, knuckles front, about shoulder width apart. Pull the bar up, over the head and allow it to come down to rest across the back of the shoulders. With toes pointed straight ahead, rise on the toes as high as possible then return to the starting position. Twenty counts should be enough for this exercise. This movement benefits the Peroneus Longus and the Tendo-Achillis, as well as the

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6. Deep knee bend on toes with dumbbells. Pick up a

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Gastrocnemius. As the pupil becomes better acquainted with this exercise, the position of the feet may be changed to various widths and the angle in which they are pointed may be changed.

8. Dead Lift with barbell. Place the hands on the bar in a fairly close grip. Bending the knees slightly, straighten the back and come up to a starting position. When returning to the starting position, do not permit the weights to touch the floor. Ten movements will complete this exercise. This exercise is excellent for developing the Gluteus Maximus, Biceps Femoris and Peroneus Longus. The spread of the grip may be varied as well as the spread of the feet.

9. Two Hands Press with barbell. Grasp the bar with hands, knuckles out, about shoulder width apart. Pull the weight up to the chest at shoulder level, turning the wrists so that the bar is cradled in the palms of the hands. From this starting position, push the weight up to an overhead position until elbows are straight. Lower the bar to shoulder level again then repeat the movement. A weight should be selected that can be handled for ten repetitions without undue stress. All the

As the pupil becomes better acquainted with this exercise, the position of the feet may be changed to various widths and the angle in which they are joined may be changed.

3. Dead Lift with barbell. Place the hands on the bar in a fairly close grip. Bending the knees slightly, straighten the back and come up to a starting position. When returning to the starting position, do not permit the weights to touch the floor. Ten movements will complete this exercise. This exercise is excellent for developing the Gluteus Maximus, Biceps Femoris and Peroneus Longus. The spread of the grip may be varied as well as the spread of the feet.

4. Two Hands Press with barbell. Grasp the bar with hands, knuckles out, about shoulder width apart. Pull the weight up to the chest at shoulder level, turning the wrists so that the bar is cradled in the palms of the hands. From this starting position, push the weight up to an overhead position until elbows are straight. Lower the bar to shoulder level again then repeat the movement. A weight should be selected that can be handled for ten repetitions without undue stress. All the

arm muscles are brought into play with emphasis on the Trapezius.

10. Straddle Hop with dumbbells. Hold a dumbbell in each hand with arms hanging at the side. Jump to a straddle position with feet about shoulder width apart. At the same time bring the dumbbells laterally to a position overhead. Hop back to the starting position without a pause. This movement should be continuous without any stops and should involve about thirty to forty counts. This exercise is an excellent co-ordination movement and also gives spring to the legs with emphasis on the calves and ankle region.

Exercises for Grade 8

1. Alternate Curls (Dumbbells)
2. Forward Raise to Overhead (Dumbbells)
3. Lateral Raise to Overhead (Dumbbells)
4. Two Hands Press (Dumbbells)
5. Step Up (Dumbbells)
6. Arm Spreads (Dumbbells)
7. Alternate Toe Touch (Dumbbells)
8. Regular Curl (Barbell)
9. Two Hands Pull Up (Barbell)
10. Prone Press (Barbell)
11. Deep Knee Bend (with feet flat) (Barbell)

arm muscles are brought into play with emphasis on the trapezius.

10. Straddle Hop with Dumbbells. Hold a dumbbell in each hand with arms hanging at the sides. Jump to a straddle position with feet about shoulder width apart. At the same time bring the dumbbells laterally to a position overhead. Hop back to the starting position without a pause. This movement should be continuous without any stops and should involve about thirty to forty counts. This exercise is an excellent co-ordination movement and also gives spring to the legs with emphasis on the calves and ankle region.

Exercises for Grade 5

1. Alternate Curl (Dumbbells)
2. Forward Raise to Overhead (Dumbbells)
3. Lateral Raise to Overhead (Dumbbells)
4. Two Hands Press (Dumbbells)
5. Step Up (Dumbbells)
6. Arm Spread (Dumbbells)
7. Alternate Toe Touch (Dumbbells)
8. Regular Curl (Barbell)
9. Two Hands Pull Up (Barbell)
10. Prone Press (Barbell)
11. Deep Knee Bend (with feet flat) (Barbell)

Description of the exercises:

1. Alternate curls. Place a dumbbell in each hand, knuckles to the rear, arms hanging straight down. Keeping the elbows close to the side bring the right-hand dumbbell forward and up to the shoulder. As the right-hand dumbbell is being lowered, raise the left-hand dumbbell in a similar movement. Continue this exercise for ten counts with each hand. This movement benefits all the muscles of the arm and wrist but in particular works the Biceps to best advantage.
2. Forward raise to overhead. Grasp a dumbbell with each hand with knuckles forward. Keeping elbows locked, raise the dumbbells forward and upward to a position straight overhead. Lower the dumbbells slowly to the starting position. Repeat this movement ten times. All the muscles of the forearm are brought into play in this exercise.
3. Lateral raise to overhead. Pick up a dumbbell in each hand, knuckles facing out to the side, arms hanging down. Raise dumbbells out to the side and continue to the overhead position, keeping arms straight throughout the movement. Lower the dumbbells to the starting position and repeat until

Description of the exercises:

1. Alphabet curls. Place a dumbbell in each hand, knuckles to the rear, arms hanging straight down. Keeping the elbows close to the side bring the right-hand dumbbell forward and up to the shoulder. As the right-hand dumbbell is being lowered, raise the left-hand dumbbell in a similar movement. Continue this exercise for ten counts with each hand. This movement benefits all the muscles of the arm and wrist but in particular works the flexors to best advantage.
2. Forward raise to overhead. Grasp a dumbbell with each hand with knuckles forward. Keeping elbows locked, raise the dumbbells forward and upward to a position straight overhead. Lower the dumbbells slowly to the starting position. Repeat this movement ten times. All the muscles of the forearm are brought into play in this exercise.
3. Lateral raise to overhead. Pick up a dumbbell in each hand, knuckles facing out to the side, arms hanging down. Raise dumbbells out to the side and continue to the overhead position, keeping arms straight throughout the movement. Lower the dumbbells to the starting position and repeat until

ten repetitions are completed. The muscles of the forearm are brought into play in addition to the work done by the Deltoids.

4. Two Hands Press. Hold a dumbbell in each hand at shoulder level, knuckles out to the side. Both dumbbells are raised at the same time to a position straight overhead until elbows lock. Lower the dumbbells to the shoulder level and repeat until ten repetitions are completed. The Triceps and Trapezius receive the most benefit in this movement but the exercise will also be felt in the arms and muscles of the sides.
5. Step-up. In addition to the dumbbells a box or locker room bench is needed for this exercise. Grasp a fairly heavy dumbbell in each hand and place the left foot on the bench. Without pushing with the right foot, step up so that both feet are side by side on the bench. Replace the right foot to the starting position and repeat this procedure ten times. After ten counts, put the right foot on the bench and repeat the exercise just as was done with the other foot. This movement works the muscles of the leg with emphasis on the Rectus Femoris, Vastus Internus and

ten repetitions are completed. The muscles of the forearm are brought into play in addition to the work done by the deltoids.

4. Two Hand Press. Hold a dumbbell in each hand at shoulder level, knuckles out to the side. Both dumbbells are raised at the same time to a position straight overhead until elbows lock. Lower the dumbbells to the shoulder level and repeat until ten repetitions are completed. The triceps and pectorals receive the most benefit in this movement but the exercise will also be felt in the arms and muscles of the sides.

5. Step-up. In addition to the dumbbells a box or lower row bench is needed for this exercise. Grasp a fairly heavy dumbbell in each hand and place the left foot on the bench. Without swaying with the right foot, step up so that both feet are side by side on the bench. Repeat the right foot to the starting position and repeat this procedure ten times. After ten counts, put the right foot on the bench and repeat the exercise just as was done with the other foot. This movement works the muscles of the leg with emphasis on the Rectus Femoris, Vastus Internus and

Vastus Externus.

6. Arm spreads. Keeping the legs stiff and with a dumbbell in each hand, bend over, permitting the arms to hang with the dumbbells in front of the instep of each foot. Keep the knuckles of each hand facing out. To begin the exercise, raise the arms upward as the body straightens, and as the dumbbells reach the shoulder level, twist the dumbbells so that the knuckles on each hand face outward and then move the dumbbells laterally to the side forming a cross with the body and arms. Return the arms to the front and then down to the starting position and repeat until ten counts are completed. As the movement is to be continuous, the arms should be raised upward and laterally in a sweeping arc. The muscles of the arms are brought into play and combine with the Pectorals to complete the movement.
7. Alternate toe touch. With a dumbbell in each hand, raise the arms sideward to shoulder level and hop to a straddle position with feet shoulder width apart. Bending forward and twisting at the waist, bring the right arm down and over so that the dumbbell is touching the left toe and at the same

Variations Exercises.

6. Arm exercises. Keeping the legs still and with a dumbbell in each hand, bend over, permitting the arms to hang with the dumbbells in front of the instep of each foot. Keep the knuckles of each hand facing out. To begin the exercise, raise the arms upward as the body straightens, and as the dumbbells reach the shoulder level, twist the dumbbells so that the knuckles on each hand face outward and then move the dumbbells laterally to the side forming a cross with the body and arms. Reverse the arms to the front and then down to the starting position and repeat until ten counts are completed. As the movement is to be continuous, the arms should be raised upward and laterally in a sweeping arc. The muscles of the arms are brought into play and combine with the Pectorals to complete the movement.

7. Alternate toe touch. With a dumbbell in each hand, raise the arms upward to shoulder level and drop to a standing position with feet shoulder width apart. Bending forward and twisting at the waist, bring the right arm down and over so that the dumbbell is touching the left toe and at the same

time raise the left arm upward to a position straight overhead. Next, return to the starting position, then reverse the procedure so that the left arm is brought down and over so that the dumbbell rests on the right toe and at the same time bring the right arm straight overhead. Continue this movement until ten counts are completed to each side. The muscles of the arms are brought into play, and particular emphasis is placed on the muscles of the sides.

8. Regular Curl. Grasp a barbell with an underhand grip, knuckles facing down and come to an erect position with the bar coming across the thighs. Keep the hands about shoulder width apart and the elbows close to the sides. Curl the bar to the chest, and still keeping the elbows close to the sides, lower the bar down so that it again rests against the thighs. The back should be kept straight so that the arms receive their full benefit. This movement may be repeated ten to twelve times. This exercise is primarily for the Biceps, but the Palmaris Longus receives a great deal of benefit in addition.

time raise the left arm upward to a position straight overhead. Next, return to the starting position, then reverse the procedure so that the left arm is brought down and over so that the dumbbell rests on the right foot and at the same time bring the right arm straight overhead. Continue this movement until ten counts are completed to each side. The muscles of the arms are brought into play, and particular emphasis is placed on the muscles of the sides.

8. Seated Curl. Grasp a barbell with an underhand grip, knuckles facing down and come to an erect position with the bar coming across the thighs. Keep the hands about shoulder width apart and the elbows close to the sides. Curl the bar to the chest, and still keeping the elbows close to the sides, lower the bar down so that it again rests against the thighs. The back should be kept straight so that the arms receive their full benefit. This movement may be repeated ten to twelve times. This exercise is primarily for the biceps, but the forearm muscles receive a good deal of benefit in addition.

9. Two Hands Pull Up. Grasp the bar with an over-hand grip, knuckles upward and hands about shoulder width apart. With the bar on the floor, keep legs stiff and pull upward until the bar is level with the neck, then lower the bar until it is about two inches from the floor and pull up again. Repeat this exercise until ten or twelve counts are completed. The Triceps and Extensors of the hands receive most of the benefit from this movement.
10. Prone Press. A locker room bench or some similar piece of equipment is needed for this exercise. Lying on the bench, have another pupil place the bar on the performer's chest. The performer grasps the bar with hands at shoulder width and knuckles facing backward. The pupil will tense his arms so that the weight of the bar will not hurt his chest as it lays there. From this position, push the bar upward steadily until the arms are straight, then return the bar to the chest. Ten counts should be sufficient to give the Triceps and Pectorals plenty of work.
11. Deep Knee Bend (with feet flat). Stand erect with a barbell resting across the shoulders

9. Two Hands Pull Up. Grasp the bar with an overhand grip, knuckles upward and hands about shoulder width apart. With the bar on the floor, keep legs stiff and pull upward until the bar is level with the neck, then lower the bar until it is

about two inches from the floor and pull up again. Repeat this exercise until ten or twelve counts are completed. The Triceps and Extensors of the hands receive most of the benefit from this movement.

10. Front Press. A locker room bench or some similar piece of equipment is needed for this exercise. Lying on the bench, have another pupil place the bar on the performer's chest. The performer grasps the bar with hands at shoulder width and knuckles facing backward. The pupil will tense his arms so that the weight of the bar will not pull his chest as it lays there. From this position, push the bar upward steadily until the arms are straight, then return the bar to the chest. Ten counts should be sufficient to give the Triceps and Pectorals plenty of work.

11. Deep Knee Bend (with feet flat). Stand erect with a barbell resting across the shoulders

behind the neck. This bar can be placed there by other pupils. The hands should be spread wide to support and balance the bar. Keeping the feet flat on the floor and the back straight, squat down bringing the tail as close to the floor as possible. Return to the erect position and repeat for ten counts. The Gluteus Maximus, Rectus Femoris, Vastus Internus, and Vastus Externus all come into play in this fine leg exercise.

Exercises for Grade 9

1. Press While Squatting (Dumbells)
2. Curl Under Armpits (Dumbells)
3. Dumbell Rowing Motion (Dumbells)
4. Alternate Press On Bench (Dumbells)
5. Alternate Reverse Curl (Dumbells)
6. Continuous Arm Movement (Dumbells)
7. Pull Up and Press (Barbell)
8. Shoulder Raise (Barbell)
9. Reverse Curl (Barbell)
10. Bent Over Rowing Motion (Barbell)
11. Straddle Lift (Barbell)

Description of the exercises:

1. Press while squatting. Take a dumbell in each hand and curl it to the shoulders with knuckles

behind the neck. This bar can be placed there by other pupils. The hands should be spread wide to support and balance the bar. Keeping the feet flat on the floor and the back straight, push down bringing the ball as close to the floor as possible. Return to the erect position and repeat for ten counts. The Dumbbell Exercises, Feet, Arms, Vastus Internus, and Vastus Externus all come into play in this type of exercise.

Exercises for Grade 2

1. Press While Squatting (Dumbbell)
2. Curl Under Arm (Dumbbell)
3. Dumbbell Rowing Motion (Dumbbell)
4. Alternate Press On Bench (Dumbbell)
5. Alternate Reverse Curl (Dumbbell)
6. Continuous Arm Movement (Dumbbell)
7. Pull up and Press (Barbell)
8. Shoulder Raise (Barbell)
9. Reverse Curl (Barbell)
10. Bent Over Rowing Motion (Barbell)
11. Staircase Lift (Barbell)

Description of the exercises:

1. Press while squatting. Take a dumbbell in each hand and curl it to the shoulders with knuckles

pointing out to the side. With feet flat on the floor, shoulder-width apart, squat down as low as possible, keeping heels on floor and at the same time pressing the dumbbells to arm's length straight overhead. Return to the upright position, lowering the dumbbells to shoulder level as you come up. Repeat this movement for ten repetitions. The Rectus Femoris, Vastus Internus and Vastus Externus, as well as the Deltoids and Trapezius, are brought into play in this exercise.

2. Curl under armpits. Grasp a dumbbell in each hand, knuckles out, and allow the arms to hang at the sides. Turning the wrists inward, curl the dumbbells to a position directly under the armpits. In this movement, the dumbbell comes up in a straight line with no forward or backward movement. The movement should be repeated ten or twelve times. The Biceps and Triceps, as well as the muscles of the forearm and wrist are affected.

3. Dumbbell rowing motion. With a dumbbell in each hand, knuckles front, stand in an upright position. Pull the dumbbells straight up to the level

pointing out to the side. With feet flat on the floor, shoulder-width apart, squat down as low as possible, keeping heels on floor and at the same time pressing the dumbbells to arms' length straight overhead. Return to the upright position, lowering the dumbbells to shoulder level as you come up. Repeat this movement for ten repetitions. The *rectus femoris*, *vastus internus* and *vastus externus*, as well as the *deltoidei* and

trapezii, are brought into play in this exercise.

2. Dumbbell under arm. Grasp a dumbbell in each hand, knuckles out, and allow the arms to hang at the sides. Turning the wrists inward, curl the dumbbells to a position directly under the armpits.

In this movement, the dumbbell comes up in a straight line with no forward or backward movement. The movement should be repeated ten or twelve times. The *biceps* and *triceps*, as well as the muscles of the forearm and wrist are affected.

3. Dumbbell rising motion. With a dumbbell in each hand, knuckles front, stand in an upright position. Pull the dumbbells straight up to the level

of the shoulders, keeping them close to the chest throughout the movement. Repeat this movement ten times. This exercise affects the Triceps muscle.

4. Alternate Press on bench. A box or locker room bench can be used to good advantage in preparing for this exercise. Lie flat on your back on the bench and have a classmate place a dumbbell in each of your hands, held at the chest. Keeping your knuckles out to the side, press the right dumbbell to arm's length overhead. As the right dumbbell is lowered, raise the left dumbbell to arm's length overhead. Ten repetitions with each arm should be sufficient. The muscles of the arm and also the Pectorals receive the emphasis on this movement.
5. Alternate reverse curl. Hold a dumbbell in each hand in front of the thighs, knuckles front. Keeping the elbows close to the sides, raise the right dumbbell forward and upward almost to the chest. As the right arm is being lowered, raise the left in the same manner. Keep alternating each arm in this movement until ten counts have been completed with each arm. The muscles of the

of the shoulders, keeping them close to the chest throughout the movement. Repeat this movement ten times. This exercise affects the triceps muscle.

4. Altimeter Press on Bench. A box or jacket from bench can be used to good advantage in preparing for this exercise. Lie flat on your back on the bench and have a classmate place a dumbbell in each of your hands, held at the chest. Keeping your knuckles out to the side, press the right dumbbell to arm's length overhead. As the right dumbbell is lowered, raise the left dumbbell to arm's length overhead. Ten repetitions with each arm should be sufficient. The muscles of the arm and also the pectorals receive the emphasis on this movement.

5. Altimeter Reverse Arm. Hold a dumbbell in each hand in front of the thighs, knuckles front. Keeping the elbows close to the sides, raise the right dumbbell forward and upward about to the chest. As the right arm is being lowered, raise the left in the same manner. Keep alternating each arm in this movement until ten counts have been completed with each arm. The muscles of the

wrist, forearm and triceps are brought into play in this exercise.

6. Continuous arm movement. Pick up a light dumbbell in each hand. Let the arms hang at the sides with knuckles out to the side. Raise the arms forward and upward to shoulder level, keeping arms straight. From this position move the arms laterally at shoulder height to the side, then return to the front and lower to the starting position. This complete movement should be repeated ten times. This movement is not necessarily to develop strength but it is more of a co-ordination exercise. This exercise is also a good warm-up movement.
7. Pull up and press. Stand close to the barbell with feet comfortably spaced and bend down, grasping the bar with the hands shoulder-width apart, knuckles forward. Pull the bar to the chest, turning the wrists so that the bar is cradled in the palms of the hands. From this position, press the bar steadily to arm's length overhead. Lower the bar to the chest and then to the floor. Continue this complete movement for

which forearm and radius are brought into play
in this exercise.

6. Continuous arm movement. Pick up a light dumbbell

in each hand. Let the arms hang at the sides
with knuckles out to the side. Raise the arms
forward and upward to shoulder level, keeping
arms straight. From this position move the arms
laterally at shoulder height to the side, then
return to the front and lower to the starting
position. This complete movement should be re-
peated ten times. This movement is not neces-
sarily to develop strength but it is more of a
co-ordination exercise. This exercise is also a
good warm-up movement.

7. Pull up and press. Stand close to the barbell

with feet comfortably spaced and bend down,
grasping the bar with the hands shoulder-width
apart, knuckles forward. Pull the bar to the
chest, turning the wrists so that the bar is
cradled in the palms of the hands. From this
position, press the bar steadily to arm's length
overhead. Lower the bar to the chest and then
to the floor. Continue this complete movement for

ten repetitions. This is another good warm-up exercise when performed with a light weight but when heavier weights are used, it develops the Trapezius and the muscles of the back and legs.

8. Shoulder raise. Grasp the bar with hands spread close together and let the bar hang at arm's length resting against the thigh. Keeping the arms straight, raise the bar as much as possible by raising the shoulders only. In this movement the bar will only go up a few inches but it will readily develop the Trapezius. Twelve to fifteen repetitions will give this muscle plenty of work.
9. Reverse Curl. Grasp the barbell with an overhand grip, knuckles to the front. Let the bar hang across the thighs. Keeping the elbows close to the sides, raise the bar forward and upward to a position close to the chest. In performing this exercise, do not bend the back as this will take the action away from the muscles of the arm and forearm which we are trying to develop through this exercise.
10. Bent over rowing motion. Place the feet in a comfortable position and bend over and grasp the bar with hands about shoulder-width apart. Keep

ten repetitions. This is another good warm-up exercise when performed with a light weight bar and heavier weights are used, it develops the Trapezius and the muscles of the back and legs.

8. Shoulder raise. Grasp the bar with hands spaced

close together and let the bar hang at arm's length resting against the thigh. Keeping the arms straight, raise the bar as much as possible by raising the shoulders only. In this movement the bar will only go up a few inches but it will readily develop the Trapezius. Twelve to fifteen repetitions will give this muscle plenty of work.

9. Reverse Curl. Grasp the barbell with an overhand

grip, knuckles to the front. Let the bar hang across the thighs. Keeping the elbows close to the sides, raise the bar forward and upward to a position close to the chest. In performing this exercise, do not bend the back as this will take the action away from the muscles of the arm and forearm which we are trying to develop through this exercise.

10. Bent over rowing motion. Place the feet in a comfortable position and bend over and grasp the bar with hands about shoulder-width apart. Keep

the legs straight and the back parallel to the floor, pull the bar to the chest, then lower it until it just grazes the floor but do not let it rest on the floor. Repeat this movement ten times.

11. Straddle Lift. Straddle the barbell so that the bar is running between the legs. Squat down, keeping the back as straight as possible. Grasp the bar in front of the body with the left hand, knuckles facing to the left. At the same time, grasp the bar with the right hand to the rear of the body, knuckles facing to the right. Keeping the arms straight, come up to the erect position until legs lock. Repeat this movement ten times. The hands may be alternated in their positions and a second series may be completed. All the leg muscles are brought into play in this movement.

Exercises for Grade 10

1. Bent Over Lateral Raise (Dumbbells)
2. Forward Press Out (Dumbbells)
3. Lateral Press Out (Dumbbells)
4. Alternate Punching (Dumbbells)
5. Leg Raises

the legs straight and the back parallel to the floor, pull the bar to the chest, then lower it until it just grazes the floor but do not let it rest on the floor. Repeat this movement ten times.

11. Straddle Lift. Straddle the barbell so that the bar is running between the legs. Spinal down, keeping the back as straight as possible. Grasp the bar in front of the body with the left hand, knuckles facing to the left. At the same time, grasp the bar with the right hand on the rear of the body, knuckles facing to the right. Lower the arms straight, come up to the erect position until legs lock. Repeat this movement ten times. The hands may be alternated in their positions and a second series may be completed. All the leg muscles are brought into play in this movement.

Exercises for Quads 10

1. Squat Over Lateral Raise (Dumbbells)
2. Forward Press Out (Dumbbells)
3. Lateral Press Out (Dumbbells)
4. Alternate Punching (Dumbbells)
5. Leg Raises

6. Sit Ups
7. Barbell Teetotem (Barbell)
8. Supine Press (Barbell)
9. Barbell Bend Over (Barbell)
10. Two Hands Pull Over (Barbell)

Description of the exercises:

1. Bent over lateral raise. Grasp a dumbbell in each hand, knuckles out to the side, and bend over at the waist so that the upper part of the body is parallel to the floor. Raise the dumbbells until they are level with the back or slightly above that level. Lower the dumbbells until they touch, keeping the arms and back straight throughout the entire exercise. Ten or twelve repetitions should be sufficient. The broad muscle of the back, the Latissimus Dorsi, receives the greatest benefit from this exercise but the muscles of the arms also come in for their share of the benefits.
2. Forward press out. Pick up a dumbbell in each hand and curl it to shoulder level, twisting the dumbbells so that the knuckles of the hands are facing out. From this position press the dumbbells straight forward until the elbows lock, keeping the arms parallel to the floor. Return to the

6. Sit Up
7. Barbell Testosterone (Barbell)
8. Angles Press (Barbell)
9. Barbell Hand Over (Barbell)
10. Two Hands Pull Over (Barbell)

Description of the exercises:

1. Feet over lateral raise. Grasp a dumbbell in each hand, knuckles out to the side, and bend over at the waist so that the upper part of the body is parallel to the floor. Raise the dumbbells until they are level with the back or slightly above that level. Lower the dumbbells until they touch, keeping the arms and back straight throughout the entire exercise. Ten or twelve repetitions should be sufficient. The broad muscle of the back, the Latissimus Dorsi, receives the greatest benefit from this exercise but the muscles of the arms also come in for their share of the benefits.
2. Forward press out. Pick up a dumbbell in each hand and curl it to shoulder level, twisting the dumbbells so that the knuckles of the hands are facing out. From this position press the dumbbells straight forward until the elbows lock, keeping the arms parallel to the floor. Return to the

starting position at the shoulders and repeat the movement ten times. This movement may be varied by twisting the hands inward slightly so that the knuckles are facing up when the arms are extended. The Deltoids and Pectorals both receive benefit from this movement.

3. Lateral press out. This exercise is quite similar to the forward press out but it works the muscles in a different position. Curl a dumbbell in each hand to shoulder level. As the dumbbells are pressed to the side at shoulder level, be sure that the knuckles are facing up. Otherwise, a different set of muscles will be favored over the Triceps and Deltoids.
4. Alternate punching. Grasp a dumbbell in each hand and stand with feet slightly apart. Hold dumbbells in front of the chest, knuckles of the hand facing to the side. Punch out with the left-hand dumbbell and at the same time lunge forward with the left foot. Recover to the starting position, then punch straight out with the right-hand dumbbell and lunge forward with the right foot. Recover to the starting position again and repeat ten times with each arm. This is an excellent

starting position as the shoulders and repeat the movement ten times. This movement may be varied by twisting the hands inward slightly so that the knuckles are facing up when the arms are extended. The deltoids and pectorals both receive benefit

from this movement.

3. Laternal press out. This exercise is quite similar to the forward press out but it works the muscles in a different position. Grasp a dumbbell in each hand to shoulder level. As the dumbbells are pressed to the side at shoulder level, be sure that the knuckles are facing up. Otherwise, a different set of muscles will be favored over the triceps and deltoids.

4. Alternate punching. Grasp a dumbbell in each hand and stand with feet slightly apart. Hold dumbbells in front of the chest, knuckles of the hands facing to the side. Punch out with the left-hand dumbbell and at the same time lunge forward with the left foot. Recover to the starting position, then punch straight out with the right-hand dumbbell and lunge forward with the right foot. Recover to the starting position again and repeat ten times with each arm. This is an excellent

co-ordination exercise.

5. Leg raises. By means of a looped rope, fasten a single plate of two and a half pounds or five pounds so that it is held between the shoes. Any method considered satisfactory by the instructor is permitted. Lie down on the floor and grasp a barbell which is placed behind the head to prevent the upper body from coming up with each movement. Raise both the legs at the same time up to a vertical position overhead. Lower them slowly to the floor, keeping the legs straight throughout the movement. Repeat ten to fifteen times. It is best to do this exercise in sets with a short rest in between sets. For example, do ten repetitions, rest, ten more, rest, and finish with another ten. The Rectus Abdominus receives full benefit in this exercise especially in the lower part of the muscle.
6. Sit Ups. Lie flat on the floor with another pupil grasping your ankles firmly. Place a barbell plate on your chest. Keeping the legs straight, sit up and bend forward as far as possible. Return to the starting position. This is a fine exercise for removing excess fat

co-ordination exercises.

3. Leg raises. By means of a looped rope, fasten a

single plate of two and a half pounds or five pounds so that it is held between the knees. Any method considered satisfactory by the instructor is permitted. Lie down on the floor and grasp a barbell which is placed behind the head to prevent the upper body from coming up with each movement. Raise both the legs at the same time up to a vertical position overhead. Lower them slowly to the floor, keeping the legs straight throughout the movement. Repeat ten to fifteen times. It is best to do this exercise in sets with a short rest in between sets. For example, do ten repetitions, rest, ten more, rest, and finish with another ten. The Rectus Abdominus receives full benefit in this exercise especially in the lower part of the muscle.

4. Sit ups. Lie flat on the floor with another

person's feet under your ankles firmly. Place a ball plate on your chest. Keeping the legs straight, sit up and bend forward as far as possible. Return to the starting position. This is a fine exercise for removing excess fat

from the midsection. The number of repetitions should be determined by the pupil's physical advancement. However, when fifty repetitions are reached, the weight should be increased rather than the number of repetitions.

7. Barbell teetotem. Grasp the barbell with hands about shoulder-width apart and pull it up until it rests across the thighs. Twisting from the waist to the right, bend over and touch the barbell to the floor, keeping arms straight. Return to the starting position and repeat the same movement to the left. Ten times to each side should be sufficient. The muscles of the back, sides and abdomen are all brought into play in this exercise.
8. Supine press. Lie on a bench with a barbell resting across the chest. Have your hands comfortably spaced with knuckles down, thumbs in toward the center. Press the barbell straight up until the arms lock, then return the bar lightly to the chest and repeat ten times. The Pectorals and Triceps are emphasized in this movement.

from the midsection. The number of repetitions

should be determined by the pupil's physical

advancement. However, when fifty repetitions are

reached, the weight should be increased rather

than the number of repetitions.

7. Barbell test. Grasp the barbell with hands

about shoulder-width apart and pull it up until

it rests across the thighs. Twisting from the

waist to the right, bend over and touch the bar-

bell to the floor, keeping arms straight. Return

to the starting position and repeat the same

movement to the left. Ten times to each side

should be sufficient. The muscles of the back,

sides and abdomen are all brought into play in

this exercise.

8. Bench press. Lie on a bench with a barbell

resting across the chest. Have your hands com-

fortably spaced with knuckles down, thumbs in

toward the center. Press the barbell straight

up until the arms lock, then return the bar

lightly to the chest and repeat ten times. The

pectorals and triceps are emphasized in this

movement.

9. Barbell bend over. Grasp a barbell with hands shoulder-width apart and pull the bar up overhead and let it come down to rest across the back of the shoulders. From this position, bend over from the waist as low as possible, then return to the upright position. The muscles of the back and neck receive most of the work in this movement. Repeat this movement ten times.
10. Two hands pull over. Lie flat on the floor with a barbell behind the head at arm's length. With hands comfortably spaced, and keeping the arms straight, pull the bar up overhead and down to rest across the thighs. Return the bar in the same manner back to the starting position. Repeat this movement ten times. This is an excellent exercise for developing the chest muscles, the Pectorals.

Exercises for Grade 11

1. Dumbell Swing (Dumbbells)
2. Bent Over Rowing Motion (Dumbbells)
3. Alternate Pull Over (Dumbbells)
4. Shoulder Curl (Dumbbells)
5. Pull Over on Bench (Dumbbells)
6. Side to Side Bend (Barbell)

9. Barbell bent over. Grasp a barbell with hands shoulder-width apart and pull the bar up overhead and let it come down to rest across the back of the shoulders. From this position, bend over from the waist as far as possible, then return to the upright position. The muscles of the back and neck receive most of the work in this movement. Repeat this movement ten times.

10. Two hands pull over. Lie flat on the floor with a barbell behind the head at arm's length. With hands comfortably spaced, and keeping the arms straight, pull the bar up overhead and down to rest across the thighs. Return the bar to the same manner back to the starting position. Repeat this movement ten times. This is an excellent exercise for developing the chest muscles, the biceps.

Exercises for Dumbbells

1. Dumbbell Swing (Dumbbells)
2. Bent Over Rowing Motion (Dumbbells)
3. Alternating Pull Over (Dumbbells)
4. Shoulder Girdle (Dumbbells)
5. Pull Over on Bench (Dumbbells)
6. Side to Side Bend (Barbell)

7. Straddle Hops (Barbell)
8. Upright Rowing Motion (Barbell)
9. Two Hands Clean and Jerk (Barbell)
10. Repetition Snatch (Barbell)

Description of the exercises:

1. Dumbbell swing. Stand with feet straddled, with a dumbbell in each hand. Hold the dumbbells in front of the body. Raise the dumbbells forward and upward to a position overhead, then bring them down following the same path and allow the dumbbells to go between the legs as far back as they will go. Repeat this movement for ten repetitions. This is a good warm-up exercise and does a great deal in stretching the back muscles.
2. Bent over rowing motion. Pick up a dumbbell in each hand and bend over so that the back is parallel to the floor with arms hanging straight down. Keeping the knuckles forward, pull the dumbbells up to the chest and then lower them back to a position almost touching the floor. Ten repetitions should be sufficient. The Triceps and Latissimus Dorsi receive benefit in this movement.
3. Alternate pull over. Lie flat on the floor on your back with a dumbbell in each hand extended to

- 7. Straddle Hop (Barbell)
- 8. Upright Rowing Motion (Barbell)
- 9. Two Hands Over and Jerk (Barbell)
- 10. Repetition Snatch (Barbell)

Execution of the exercises:

- 1. Overhead Swing. Stand with feet straddled, with a dumbbell in each hand. Hold the dumbbells in front of the body. Raise the dumbbells forward and upward to a position overhead, then bring them down following the same path and allow the dumbbells to go between the legs as far back as they will go. Repeat this movement for ten repetitions. This is a good warm-up exercise and does a great deal in stretching the back muscles.
- 2. Bent over rowing motion. Pick up a dumbbell in each hand and bend over so that the back is parallel to the floor with arms hanging straight down. Keeping the knees forward, pull the dumbbells up to the chest and then lower them back to a position almost touching the floor. Ten repetitions should be sufficient. The triceps and latissimus dorsi receive benefit in this movement.
- 3. Alternating pull over. Lie flat on the floor on your back with a dumbbell in each hand extended to

the rear of the head with knuckles down. Keeping the arms straight, pull the right-hand dumbbell upward and forward to a position alongside the hip. As the right-hand dumbbell is being returned over the same arc, pull the left-hand dumbbell upward and forward in the same manner. Ten complete movements with each arm should be enough to give the Pectorals and arm muscles a thorough workout.

4. Shoulder curl. Pick up a dumbbell in each hand and press them out to the side at shoulder level, knuckles down. Curl the dumbbells so that they come to a point beside the ear on each side. Extend the dumbbells out to the starting position. Keep the arms extended at shoulder level until ten repetitions have been completed. The Triceps and Biceps receive the benefit of this exercise.
5. Pull over on bench. Lie on a bench with the head extending just over the end of the bench. Grasp a dumbbell in each hand and extend them back over the head and let them rest on the floor. Keep the knuckles of the hand facing down. Pull both dumbbells upward and forward until they reach a point alongside the hips, then return them over

the rear of the head with knuckles down. Keeping the arms straight, pull the right-hand dumbbell upward and forward to a position alongside the hip. As the right-hand dumbbell is being returned over the same arc, pull the left-hand dumbbell upward and forward in the same manner. Ten consecutive movements with each arm should be enough to give the pectorals and arm muscles a thorough workout.

4. Shoulder curl. Pick up a dumbbell in each hand and press them out to the side at shoulder level, knuckles down. Bend the dumbbells so that they come to a point beside the ear on each side. Extend the dumbbells out to the starting position. Keep the arms extended at shoulder level until ten repetitions have been completed. The triceps and biceps receive the benefit of this exercise.

5. Roll over on bench. Lie on a bench with the head extending just over the end of the bench. Grasp a dumbbell in each hand and extend them back over the head and let them rest on the floor. Keep the knuckles of the hand facing down. Pull both dumbbells upward and forward until they reach a point alongside the hips, then return them over

the same arc to the rear position. The arms may be bent slightly during this movement. Ten repetitions should be sufficient. This exercise is an excellent means for developing the Pectorals, the muscles of the chest and also the muscles of the arms.

6. Side to side bend. Pull a barbell up overhead and let it come down across the back of the shoulders behind the neck. With the feet spaced a comfortable distance apart and the hands keeping the barbell balanced, bend as far as possible to the right. Come back to the upright position and then bend as far as possible to the left. Ten repetitions to each side will be enough to give the muscles of the sides a good workout.
7. Straddle hops. Pull a barbell up overhead and let it come down across the back of the shoulders, behind the neck. Steady the barbell with the hands. Starting with the feet together, jump up and straddle the feet to a position about shoulder-width apart and return to the starting position. When jumping, land on the toes rather than the flat foot. By jumping on the toes, the Gastrocnemius is given plenty of work. Complete ten or twelve repetitions.

the same are to the rear position. The arms may be bent slightly during this movement. Ten repetitions should be sufficient. This exercise is an excellent means for developing the posterior muscles of the chest and also the muscles of the arms.

2. Side to side jump. Pull a barbell up overhead

and let it come down across the back of the shoulders behind the neck. With the feet spaced a comfortable distance apart and the hands keeping the barbell balanced, bend as far as possible to the right. Come back to the upright position and then bend as far as possible to the left. Ten repetitions to each side will be enough to give the muscles of the sides a good workout.

3. Straddle hops. Pull a barbell up overhead and

let it come down across the back of the shoulders behind the neck. Steady the barbell with the hands. Starting with the feet together, jump up and straddle the feet to a position about shoulder-width apart and return to the starting position. When jumping, land on the toes rather than the flat foot. By jumping on the toes, the gastrocnemius is given plenty of work. Complete ten or twelve repetitions.

8. Upright rowing motion. Grasp a barbell with a narrow grip, knuckles forward, and let it rest across the thighs with the arms straight. Keeping the back straight, pull the bar straight up to a point under the chin and then lower it to the starting position. The elbows will bend and raise outward and up as the bar comes up. The Triceps, Trapezius and Latissimus Dorsi are affected by this movement.
9. Two hands clean and jerk. Grasp the barbell with hands about shoulder-width apart, knuckles forward. Pull the bar up to the chest, turning the wrists so that the bar is cradled in the hands. As the bar is pulled up, give a slight hop and split the legs so that the left foot goes forward and the right foot goes backward. In this position, it is easier to get under the weight. With the weight cradled across the chest, bring the right foot alongside the left, pause, then bend the knees slightly and push the bar to arm's length overhead, splitting the legs again as mentioned above. Bring the right foot alongside the left foot and the movement is completed. Lower the bar to the chest and then to the floor. Re-

8. Horizontal rowing motion. Grasp a barbell with a narrow grip, knuckles forward, and let it rest across the thighs with the arms straight. Keeping the back straight, pull the bar straight up to a point under the chin and then lower it to the starting position. The elbows will bend and raise outward and up as the bar comes up. The triceps, trapezius and latissimus dorsi are affected by this movement.

9. Two hands clean and jerk. Grasp the barbell with hands about shoulder-width apart, knuckles forward. Pull the bar up to the chest, turning the wrists so that the bar is cradled in the hands. As the bar is pulled up, give a slight hop and split the legs so that the left foot goes forward and the right foot goes backward. In this position, it is easier to get under the weight. With the weight cradled across the chest, bring the right foot alongside the left, pause, then bend the knees slightly and push the bar to arm's length overhead, splitting the legs again as mentioned above. Bring the right foot alongside the left foot and the movement is completed. Lower the bar to the chest and then to the floor. Re-

peat this movement until ten repetitions have been completed. As can be readily seen, this exercise is one of the best for gaining a workout for practically all the major muscle groups.

10. Repetition snatch. Grasp the bar with hands a little more than shoulder-width apart, knuckles forward. Pull the bar up to a position arm's length overhead. As the bar passes the level of the chest, split the legs so that the left leg goes forward and the right leg goes to the rear. Bring the right foot alongside the left foot and stand erect with weight held overhead with arms locked. Lower the bar to the chest and then to the floor. Repeat this complete movement ten times. This exercise is excellent for developing co-ordination and also for developing strength in the arms, back and legs.

Exercises for Grade 12

1. Sit Ups
2. Lateral Raise While Lying (Dumbells)
3. One Arm Press (Dumbell)
4. Leg Circles
5. Press While Seated (Barbell)
6. Side Twist (Barbell)

best this movement until ten repetitions have been completed. As can be readily seen, this exercise is one of the best for gaining a work-out for practically all the major muscle groups.

10. Repetition Exercise. Place the bar with hands a

little more than shoulder-width apart, knees

forward. Pull the bar up to a position

length overhead. As the bar passes the level of

the chest, split the legs so that the left leg

goes forward and the right leg goes to the rear.

Bring the right foot alongside the left foot and

stand erect with weight held overhead with arms

locked. Lower the bar to the chest and then to

the floor. Repeat this complete movement ten

times. This exercise is excellent for developing

co-ordination and also for developing strength

in the arms, back and legs.

Exercises for Grade 12

1. Sit Ups

2. Latent Raise While Lying (Dumbbells)

3. One Arm Press (Dumbbell)

4. Leg Curls

5. Press While Seated (Barbell)

6. Side Twist (Barbell)

7. Press Behind the Neck (Barbell)
8. Rapid High Dead Lift (Barbell)
9. Single Knee Bends (Barbell)
10. Running in Place (Barbell)

Description of the exercises:

1. Sit ups. Lie flat on the back on the floor with a barbell plate held behind the neck with both hands. Another pupil will grasp the ankles so that the feet will not come up in the movement. From this position, come up to a sitting position and bend forward as far as possible, then return to the starting position. Ten to fifteen repetitions should be sufficient until the pupil becomes used to the movement. Then the repetitions should be periodically increased. The upper part of the abdominals receive the benefit of this movement.
2. Lateral raise while lying. Lie flat on the back with a dumbbell in each hand, extended out to the side. Keeping the knuckles down, bring the dumbbells up overhead until they touch. Then lower them back to the sides, keeping the arms stiff throughout the entire movement. Ten repetitions will be enough to give the muscles of the arms and the Pectorals plenty of work.

7. Press Behind the Neck (Barbell)
8. Rapid High Dead Lift (Barbell)
9. Single Knee Bends (Barbell)
10. Running in Place (Barbell)

Description of the exercises:

1. Sit ups. Lie flat on the back on the floor with a barbell plate held behind the neck with both hands. Another pupil will grasp the ankles so that the feet will not come up in the movement. From this position, come up to a sitting position and bend forward as far as possible, then return to the starting position. Ten to fifteen repetitions should be sufficient until the pupil becomes used to the movement. Then the repetitions should be periodically increased. The upper part of the abdominal muscle receives the benefit of this movement.

2. Laternal raise while lying. Lie flat on the back with a barbell in each hand, extended out to the sides. Keeping the knuckles down, bring the dumbbells up overhead until they touch. Then lower them back to the sides, keeping the arms stiff throughout the entire movement. Ten repetitions will be enough to give the muscles of the arms and the pectorals plenty of work.

3. One arm press. This exercise should be executed with a dumbbell until the pupil becomes adapted to it. When this point is reached, a barbell may be used. Pick up a dumbbell in the right hand and pull it to the shoulder for the start of the press. With the knuckles pointing to the side, press the weight to a position at arm's length overhead. Lower the weight to the shoulder, then to the floor. The same movement can be executed with the left hand. As this is an exercise to develop strength, the weight should be enough to give the pupil a good workout in ten repetitions. All the muscles of the arm come into play in this movement.
4. Leg circles. Lie on the floor or on a bench with a weight tied with rope to each foot. Raise the legs about a foot from the floor and, by moving each foot alternately, describe a small circle by moving the foot forward, downward, backward and upward. Repeat this movement about fifteen times, and, as the muscles become accustomed to the work, increase the number of repetitions gradually. The lower part of the abdominals receive the benefit of this movement.

3. One arm press. This exercise should be executed with a dumbbell until the pull becomes adapted to it. When this point is reached, a barbell may be used. Pick up a dumbbell in the right hand and pull it to the shoulder for the start of the press. With the arm extended pointing to the side, press the weight to a position at arm's length overhead. Lower the weight to the shoulder, then to the floor. The same movement can be executed with the left hand. As this is an exercise to develop strength, the weight should be enough to give the pull a good workout in ten repetitions. All the muscles of the arm come into play in this movement.

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5. Press while seated. Grasp the barbell with hands about shoulder-width apart, knuckles forward. Pull the bar to the shoulders, turning the wrists so that the bar is cradled in the hands. With the bar at shoulder level, sit down on a bench. Press the bar straight up to a position at arm's length overhead, then lower the bar to shoulder level again. Repeat this movement ten times. The muscles of the arms and the Trapezius receive a good workout in this exercise.
6. Side twist. Grasp the barbell with hands slightly more than shoulder-width apart. Pull the bar to the chest, then press the weight to arm's length overhead and stand with feet apart. Twist the upper part of the body to the right, turning the bar at the same time so that the pupil is facing to the right. Twist back to the front and then twist to the left. Fifteen repetitions to each side should be sufficient. The side muscles are strengthened in this movement.
7. Press behind the neck. Pull the barbell up overhead and then let it come down to rest across the shoulders behind the neck. As an alternative, another pupil may place the bar into this posi-

5. Press while seated. Grasp the barbell with hands

about shoulder-width apart, knuckles forward.

Pull the bar to the shoulders, turning the wrists

so that the bar is cradled in the hands. With

the bar at shoulder level, sit down on a bench.

Press the bar straight up to a position at arm's

length overhead, then lower the bar to shoulder

level again. Repeat this movement ten times.

The muscles of the arms and the trapezius receive

a good workout in this exercise.

6. Side twist. Grasp the barbell with hands slightly

more than shoulder-width apart. Pull the bar to

the chest, then press the weight to arm's length

overhead and stand with feet apart. Twist the

upper part of the body to the right, turning the

bar at the same time so that the right leg is facing

to the right. Twist back to the front and then

twist to the left. Fifteen repetitions to each

side should be sufficient. The side muscles are

strengthened in this movement.

7. Press behind the neck. Pull the barbell up over-

head and then let it come down to rest across the

shoulders behind the neck. As an alternative,

another curl may place the bar into this posi-

tion. Taking a fairly wide grip, press the bar to a position overhead until arms lock, then lower it to the position behind the neck. Repeat this movement ten times. The Triceps and Trapezius are particularly emphasized in this exercise.

8. Rapid high dead lift. Grasp the barbell with a comfortable grip, knuckles front. With a strong pull using the arms, back and legs, bring the bar up to the level of the shoulders, keeping the knuckles of the hands up. Do not turn the wrists as in the cleaning motion used in some of the other exercises. Lower the bar to the floor and repeat the movement until ten repetitions have been completed.
9. Single knee bends. Bring the barbell to a position across the shoulders behind the neck. Standing with the feet slightly apart, bend the right knee and touch it to the floor. Come up to a standing position, then bend the left knee and touch it to the floor, after which the pupil will again come to a standing position. Ten knee bends with each leg will be sufficient. The Rectus Femoris, Vastus Externus and Vastus Internus do the work in this movement.

tion. Taking a fairly wide grip, lower the bar to a position overhead until arms lock, then lower it to the position behind the neck. Repeat this movement ten times. The triceps and lats are particularly emphasized in this exercise.

8. Rapid High Dead Lift. Grasp the barbell with a comfortable grip, knuckles front. With a strong pull using the arms, back and legs, bring the bar up to the level of the shoulders, keeping the knuckles of the hands up. Do not turn the wrists as in the classic motion used in some of the other exercises. Lower the bar to the floor and repeat the movement until ten repetitions have been completed.

9. Single Knee Bends. Bring the barbell to a position across the shoulders behind the neck. Stand with the feet slightly apart, bend the right knee and touch it to the floor. Come up to a standing position, then bend the left knee and touch it to the floor, after which the right will again come to a standing position. Ten knee bends with each leg will be sufficient. The Barbell, Vastus Extremus and Vastus Internus do the work in this movement.

10. Running in place. Pull the barbell up to an overhead position and let it come down to rest on the shoulders behind the neck. Keeping the bar firmly in place with the arms and hands, run in place by alternately raising the knees and springing on the toes. Thirty counts should give the pupil plenty of work. The Gastrocnemius muscle gets the greatest benefit in this movement.

10. Running in place. - With the feet as in
overhead position and let the arms down to rest
on the shoulders behind the neck. Keeping the
feet firmly in place with the arms and hands, run
in place by alternately raising the knees and
springing on the toes. Thirty counts should give
the pupil plenty of work. The instructor as-
sists the greatest benefit in this exercise.

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